1. A color image processing apparatus, comprising:

color image inputting means for inputting a color image and outputting a color image signal;

holding means for holing the color image signal;

calculating means for processing the color image signal;

threshold value assigning means for assigning a threshold value corresponding to color information of a considered pixel; and

labeling means for comparing color information of adjacent pixels and assigning the same label to the pixels when the distance thereof is the threshold value or less.

2. The color image processing apparatus as set forth in claim 1, further comprising:

average color calculating means for obtaining the average color of pixels assigned the same label; and

average color comparing means for comparing the color of a pixel adjacent to the considered pixel and the average color,

wherein said labeling means assigns the same label

to a pixel only when the compared result is in a predetermined range.

3. A color image processing apparatus, comprising:

color image inputting means for inputting a color image and outputting a color image signal;

holding means for holding the color image signal;

calculating means for processing the color image signal; and

image reducing means for reducing the color image signal and generating a reduced image,

wherein areas with the same color are obtained from the reduced image and areas corresponding to the obtained areas are extracted from the original image corresponding to only a color extracted from the reduced image.

4. The color image processing apparatus as set forth in claim 3, further comprising:

labeling means for obtaining enclosing rectangles of label images and label areas of the reduced image, representative colors thereof, the number of colors in each label area, and colors, obtaining rectangles of the original image corresponding thereto, searches a pixel with a color similar to the representative color in the rectangle, and performing a labeling process starting from the searched pixel.

5. The color image processing apparatus as set forth in claim 3, further comprising:

labeling means for determining all colors and similarities of areas of the reduced image and assigning the same label to areas when the similarities of the colors of the areas are smaller than the threshold value.

6. The color image processing apparatus as set forth in claim 1,

wherein said threshold value assigning means determines the similarities of colors of areas with respective elements of a variable threshold value of three color elements, determines that the similarities of colors of the areas are 0 when the color difference of the three color elements of the areas is smaller than a variable threshold values, and determines that the similarities of colors of the areas are larger than the threshold value when the color difference of the three color elements of the areas is equal to or larger

than the threshold value.

7. A pattern extracting apparatus, comprising:

first threshold value assigning means for assigning a first threshold value for a first color composing a color image;

second threshold value assigning means for assigning a second threshold value for a second color composing the color image;

first considered pixel assigning means for assigning a pixel of the first color as a first considered pixel of the color image;

second considered pixel assigning means for assigning a pixel of the second color as a second considered pixel of the color image;

first adjacent pixel detecting means for detecting a first adjacent pixel adjacent to the first considered pixel;

second adjacent pixel detecting means for detecting a second adjacent pixel adjacent to the second considered pixel;

first labeling means for assigning the same label as the first considered pixel to the first adjacent pixel when the difference between the color of the first considered pixel and the color of the first adjacent pixel is less than the first threshold value; and

second labeling means for assigning the same label as the second considered pixel to the second adjacent pixel when the difference between the color of the second considered pixel and the color of the second adjacent pixel is less than the second threshold value.

8. A pattern extracting apparatus, comprising:

clustering means for clustering pixels of an input image corresponding to color information of adjacent pixels; and

grouping means for categorizing clusters as groups corresponding to color information and geometry information of the clusters obtained by said clustering means.

9. A pattern extracting apparatus for extracting areas in the range of the variation of colors determined in a second resolution as areas with the same color in the case that the areas are determined as the same color in a first resolution and as different colors in the second resolution.

10. A pattern extracting apparatus, comprising:

label image generating means for generating a label image corresponding to color information of an input image;

enclosing rectangle generating means for generating an enclosing rectangle of the label image;

first enclosing rectangle extracting means for extracting an enclosing rectangle with a size in a predetermined range from the enclosing rectangle generated by said enclosing rectangle generating means;

search area assigning means for assigning a search area in a predetermined range from the enclosing rectangle extracted by said first enclosing rectangle;

second enclosing rectangle extracting means for extracting an enclosing rectangle in the search area, or partially disposed in the search area from the enclosing rectangle generated by said enclosing rectangle generating means;

grouping means for categorizing the enclosing rectangle extracted by said first enclosing rectangle extracting means and the enclosing rectangle extracted by said second enclosing rectangle extracting means as groups corresponding to the color information of the area of the enclosing rectangle extracted by said first enclosing rectangle extracting means and the color information of the area of the enclosing

rectangle extracted by said second enclosing rectangle extracting means; and

character string extracting means for extracting a character string corresponding to the groups categorized by said grouping means.

11. A pattern extracting apparatus, comprising:

first color comparing means for comparing color information of adjacent pixels of an input image;

second color information comparing means for comparing the color information of the pixels compared by said first color information comparing means and color information of a label image adjacent thereto; and

labeling means for assigning labels to pixels corresponding to the compared result of said first color information comparing means and the compared result of said second color information comparing means.

12. The pattern extracting apparatus as set forth in claim 11,

wherein color information of the label image is the average value of color information of pixels assigned the same label.

13. A pattern extracting apparatus, comprising:

color difference calculating means for calculating the color difference between adjacent pixels of an area represented with a predetermined color;

threshold value assigning means for assigning a threshold value corresponding to the color difference; and

labeling means for assigning a label to a pixel adjacent to a pixel represented with the predetermined color corresponding to the threshold value.

14. The pattern extracting apparatus as set forth in claim 13, further comprising:

print model generating means having meshes of basic colors, basic color dots being disposed at lattice points of the meshes, the meshes being rotated and superimposed each other, the sizes of the basic color dots being varied, so as to generate a color as a print model.

15. The pattern extracting apparatus as set forth in claim 14, further comprising:

color difference table generating means for generating a color difference table that stores luminance values of colors generated by said print model generating means and the color difference between adjacent pixels corresponding to the luminance values in each read resolution of the print model.

16. The pattern extracting apparatus as set forth in claim 15, further comprising:

a model resolution estimation processing unit for estimating the read resolution of the print mode for an input image.

17. The pattern extracting apparatus as set forth in claim 16,

wherein said model resolution estimating processing unit estimates a resolution of which a luminance value of a color and a color difference registered in the color difference table optimally confirms to the entire input image as a read resolution of the print model of the input image.

18. The pattern extracting apparatus as set forth in claim 16,

wherein said model resolution estimating processing unit estimates a resolution of which a luminance value of a color

and a color difference registered in the color difference table optimally confirms to a local area of the input image as a read resolution of the print model of the local area of the input image.

19. The pattern extracting apparatus as set forth in claim 16,

wherein said model resolution estimation processing unit causes a read resolution of the print model to be a fixed value.

20. The pattern extracting apparatus as set forth in claim 13, further comprising:

grouping means for categorizing label images labeled by said labeling means as a group.

21. The pattern extracting apparatus as set forth in claim 20,

wherein said grouping means categorizes a label image as a group corresponding to the thickness of a pattern of the label image.

22. The pattern extracting apparatus as set forth in claim 21,

wherein said grouping means has:

contour tracing means for obtaining the contour length of the pattern;

area calculating means for obtaining the area of the pattern; and

thickness calculating means for obtaining the thickness of the pattern corresponding to the ratio of the area of the pattern and the contour length of the pattern.

23. The pattern extracting apparatus as set forth in

claim 22,

wherein said contour tracing means searches a second pixel that is the contour of a pattern with a first pixel that is the contour of the pattern in such a manner that the second pixel is searched from eight pixels that are adjacent to the first pixel and that are adjacent to a source pixel of the first pixel.

24. A pattern extracting apparatus, comprising:

enclosing rectangle generating means for generating an enclosing rectangle corresponding to patterns included in an input image;

first enclosing rectangle extracting means for extracting an enclosing rectangle with a size in a predetermined range or at a position in a predetermined range from the enclosing rectangles generated by said enclosing rectangle generating means;

search area assigning means for assigning a search area in a predetermined range from an enclosing rectangle extracted by said first enclosing rectangle extracting means;

second enclosing rectangle extracting means for extracting an enclosing rectangle in the search area, or partially disposed in the search area from the enclosing rectangle generated by said enclosing rectangle generating means; and

pattern extracting means for extracting a particular pattern from the input image corresponding to the extracted result of said second enclosing rectangle extracting means.

25. The pattern extracting apparatus as set forth in claim 24,

wherein said second enclosing rectangle extracting means has:

rectangle number storing means for storing rectangle

numbers corresponding to vertical and horizontal coordinates of the enclosing rectangles generated by said enclosing rectangle generating means;

rectangle number extracting means for extracting rectangle numbers included in vertical and horizontal coordinates in a predetermined range from the

enclosing rectangle extracted by said first enclosing rectangle extracting means; and

adjacent rectangle extracting means for extracting a rectangle number with a rectangle number that is extracted by said rectangle number extracting means and that is included in both the vertical and horizontal coordinates as an enclosing rectangle in the search area, or partially disposed in the search area.

26. The pattern extracting apparatus as set forth in claim 25,

wherein said rectangle number storing means stores the rectangle numbers of the enclosing rectangles in the order of coordinate values, and

wherein said rectangle number extracting means searches rectangle numbers in the ascending order of the coordinate values and extracts a rectangle number having an equal coordinate value.

27. A pattern extracting method, comprising the steps of:

calculating color information of a considered pixel of a color image; and

controlling a threshold value for determining whether or not to assign a pixel adjacent to the considered pixel the same label as the considered pixel corresponding to said color information.

28. A pattern extracting method, comprising the step of:

extracting an area in a range of a color difference between adjacent pixels corresponding to a read resolution of a color image as an area with the same color when colors of the color image are represented in a combination of color element dots.

29. A pattern extracting method, comprising the steps of:

composing a color image in a combination of basic color dots;

reading the color image with a predetermined resolution;

calculating the luminance difference between adjacent pixels that are read with the predetermined resolution for the colors of the color image; and

extracting the range of the same color of the input image corresponding to the luminance difference.

30. A pattern extracting method, comprising the step of:

extracting areas as the same area, when the areas are enlarged, even if the areas are viewed as areas with different colors, if the areas are viewed as the same color by the naked eye.

31. A pattern extracting method, comprising the steps of:

detecting the color difference in an area in a second resolution, the color difference being determined as the same color in a first resolution;

assigning a threshold value for determining whether or not the colors of the area are the same corresponding to the color difference detected in the second resolution; and

extracting the area determined as the same color in the

first resolution corresponding to the threshold value.

32. A pattern extracting method, comprising the steps of:

generating a label image corresponding to color information of an input image;

extracting a first pattern with a size in a predetermined range from the label image;

extracting a second pattern in a predetermined range from the first pattern;

categorizing the first pattern and the second pattern corresponding to color information of the first pattern and color information of the second pattern as a group; and

extracting a character string from the pattern categorized as the group.

33. A pattern extracting method, comprising the steps of:

assigning connected pixels with a color difference in a predetermined range the same label;

extracting a pattern with a size in a predetermined range, the pattern being assigned a first label;

extracting a pattern assigned a second label in a predetermined range from the pattern assigned the first label;

comparing the color of the pattern assigned the first label and the color of the pattern assigned the second label;

categorizing the pattern assigned the first label and the pattern assigned the second label as the same group when the color difference between the pattern

assigned the first label and the pattern assigned the second label is in a predetermined range.

34. A storage medium from which a computer reads a program that causes the computer to perform the steps of:

assigning a threshold value corresponding to color information of a considered pixel of a color image; and

comparing color information of adjacent pixels and assigning the adjacent pixels the same label when the distance of the color information is less than the threshold value.

35. A storage medium from which a computer reads a program that causes the computer to perform the steps of:

detecting the color difference of areas in a second resolution, the color difference being determined as the same color in a first resolution;

assigning a threshold value for determining whether or not the color of the areas is the same corresponding to the color difference detected in the second resolution; and

extracting the areas determined as the same color in the first resolution corresponding to the threshold value.